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By H. G. DAVIS
Chairman of the Permanent Pan-American Railway Committee

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THE PAN-AMERICAN RAILWAY:

ITS BUSINESS SIDE.

BY H. G. DAVIS, CHAIRMAN OF THE PERMANENT PAN-AMERICAN RAILWAY COMMITTEE.

The principles and motives underlying the assembling of Pan-American conferences are found in the Monroe Doctrine. These conferences are the logical result of the position therein taken of the independence and interdependence of the republics of the Western Hemisphere. It was in December, 1823, that President Monroe sent to Congress his message announcing the position of the United States with respect to these new republics, and the relation of the Governments of the Old World thereto. Emulating the spirit of freedom, which in the colonies of the north had found expression in the formation of a government by the people, the colonies of Spain in the south asserted their independence and became republics. The United States naturally sympathized with these sister republics in their struggles and success, and, from motives not altogether unselfish, perhaps, was anxious that this success should be permanent. To promote the feeling of friendship and to encourage and advance trade relations between this country and the countries to the south, in 1826, Mr. Clay, then Secretary of State under President Adams, endeavored to bring about a general conference of representatives of these governments, and some progress was made to that end. Delegates were appointed, and a number of the southern republics expressed their intention to be represented; but it fell through, as Congress and the Administration were not in political accord.

When the first International American Conference, the inspiration of Mr. Blaine, when Secretary of State, held its sessions in Washington, in 1889-90, its work covered a wide field. The desire of Mr. Blaine was to draw the countries of the Western

Hemisphere more closely together by practical measures, one of the most important of these being the Pan-American Railway.

Following his suggestion, and with the cooperation of the delegates from the United States and from the other countries, a series of resolutions was adopted in support of the project. The substance of these was in the declaration that a railroad connecting all or most of the nations represented in the Conference would contribute greatly to the development of trade relations between them, and to the growth of their material interests, and also that the best method of facilitating its accomplishment would be the creation of an international commission of engineers to ascertain the possible routes, determine their true length, estimate the cost of each, and compare their respective advantages.

The Congress of the United States made provision for this international commission, and the other republics contributed *pro rata* to defray its expenses. The Commission included Mr. A. J. Cassatt, Chairman, Mr. R. C. Kerens, and myself, as representatives of the United States. It had the cooperation of some of the best railway minds of the country. Under its direction, the intercontinental survey was organized and the instructions of the Conference to ascertain the possible routes, etc., were carried out. Parties of engineers were placed in the field, and surveys and locations were made by them. It was shown that by using railway systems in operation and filling in the gaps between them it would be entirely practicable to secure rail communication between the United States and the Argentine Republic. The results were published by authority of Congress, and have since been utilized by the various governments, and by individuals and companies engaged in railroad building in Mexico, Central America and South America.

The Second International American Conference, at its sessions in the City of Mexico in 1901-02, gave further endorsement to the Pan-American project as a feasible one which merited continued support by the respective governments. It provided for the appointment of Commissioners to visit the republics interested, and report especially on the existing condition of commerce and the prospects for business for an intercontinental line. It also provided for the appointment of a Permanent Pan-American Railway Committee, residing in the United States, which should furnish all possible information as to the work of the Intercontinental Railway, and should report to the next Conference on the result of its labors. This Committee is now constituted as follows: H. G. Davis, Chairman; Andrew Carnegie; J. D. Casasus, the Mexican ambassador; C. M. Pepper; A Lazo-Arriaga.

Under this resolution and the authority of Congress, a Commissioner visited the different countries, while the Committee has pursued the course marked out for it in obtaining and making public all possible information on the subject. The next Conference, the third, is to meet in Rio Janeiro in July, and the Committee, following instructions given, will report to that body what has been accomplished since the Mexican Conference.

Without anticipating these results, which are of great importance, it is proper to take into account the general subject and foundation of the proposed intercontinental trunk line and branches. The basis is a business one, whether looked at from the standpoint of the individual, of a single nation, or of the group of nations which constitute the American Continent. Railroads are built to earn dividends. For the body of stockholders the dividends must depend on the net earnings to be obtained from the traffic that either already exists or is created. The capitalists who supply the funds may have additional reasons, resulting from their ownership of mines, of timber areas, or of agricultural regions whose products can only be made marketable by providing means of communication. Sometimes, therefore, their investments do not depend solely on the actual net earnings. Yet the increased value of lands and the market obtained for their products of every kind are only another form of dividends.

For a nation, the dividends cannot be estimated in direct terms of interest on bonds or of net earnings for capital stock. For it the dividends are the development of the local resources, the wider market obtained for the products of the country, the increase of the population through immigration, and, in a word, the addition to the wealth of the nation. There is also the dividend which cannot be estimated in terms of dollars and cents because it comes from the better knowledge which the people of different regions of the country obtain of one another, and from the cultivation of the national patriotic spirit. This is a clear case of the influence of frequent and cheap communication among diverse sections of a country.

It is because of the addition to the wealth of the nation by developing its resources and the strengthening of the patriotic bonds which bind the different sections and their inhabitants more closely together, that all progressive governments have aided railway construction. This will always be the policy of a new country with undeveloped resources, or of an old country which seeks to become a modern nation. It was this feeling that caused the United States to spend $400,000 on surveys across the Rocky Mountains, long before any feasible plans for a railroad to the Pacific were attracting the attention of capitalists, and, later, developed into a definite national policy when the Pacific Railways were aided by enormous land grants, subsidies and bond guaranties. When the first transcontinental line was constructed, many wise men doubted whether there ever would be traffic enough to pay the operating expenses. Now there are several of these lines paying very well, and still others projected. No one questions that in the firmness with which the Pacific coast held to the Union during the time of the Civil War, the United States received returns far transcending the aid originally extended to the railways.

Mexico, which has carried out a policy similar to that of the United States, under the enlightened government of General Diaz, has received its dividends in the peace, prosperity and patriotic spirit that have knitted the diverse sections of the country together. When Sir John MacDonald undertook the gigantic enterprise of building the Canadian Pacific Railway, Canada made a like investment, which has returned not only large sums of money, but has resulted in a spirit of national unity.

These instances might be multiplied, if it were necessary to argue seriously that government aid to railway construction by land grants, bond guaranties, cash subsidies, exemption from taxes, and tariff concessions for the admission of construction material, needs justification. Such methods do not need justification; they justify themselves by their results.

The international, like the national, dividends are wider markets and the enlarged trade which come from increasing the means of intercourse between different countries. A better understanding by one people of another people is certainly a desirable result, and this is secured by furnishing means of communication. The international dividend may be said to be one of dollars and cents in the way of more commerce, and of peace in the way of avoiding the misunderstandings which come from lack of intercourse.

In the light of these facts, the proposed Pan-American Railway may be said to offer returns to individuals, to the nations as separate republics, and to them as part of the family of nations of the Western Hemisphere. But the question at the root of railroad building always must relate to the commercial advantages, that is, to the traffic. It is not often that a rail line is built for traffic that already exists. Freight follows the rail line. The railway creates tonnage, and tonnage is commerce, both local and international.

The area of South America is slightly less than that of North America, and is nearly twice as large as the United States. With those of Central America and Mexico, it has seventeen separate republics, containing an estimated population of sixty millions of people.

The following tables are interesting, as showing the total annual commerce of all these countries and the share therein of the United States. The figures are from Government sources, and are approximated from the latest available data:

IMPORTS.

	Total of	*From United States*	*Per cent.*
Mexico	$84,487,000	$47,530.000	56
Central America	18,080,000	7,733.000	42
South America	444,014,000	58,944,000	13
Total	$546,581,000	$114,207,000	20

EXPORTS.

	Total of	*To United States*	*Per cent.*
Mexico	$96,962,000	$65,095,000	67
Central America	25,038,000	10,205,000	40
South America	629,869,000	136,488,000	22
Total	$751,869,000	$211,788,000	28

ENTIRE COMMERCE.

	Total of	*With United States*	*Per cent.*
Mexico	$181,449,000	$112,625.000	62
Central America	43,118,000	17,938,000	41
South America	1,073,883,000	195,432,000	19
Grand Total	$1,298,450,000	$325,995,000	25

It will be seen that with Mexico, with which we have railroad communication, the larger part of her commerce is with the United States; that with Central America, not so closely connected with us, less than half is with this country; while with South America, it is only nineteen per cent. In the grand total of the trade of all the countries to the south, the United States has twenty-five per cent. We buy two hundred millions, or a third more than we sell them; but it is not really so important which side has the balance, so long as there is a good and growing trade on both sides. What will be noted in any detailed analysis of trade returns is that commerce grows in the ratio in which increased facilities are given, not merely to steamship service, but more especially to means of railway communication.

The steamship service, from its nature, is of little benefit in developing the interior of the country. The coast line does not furnish a large traffic, and the points not reached by railroads create little tonnage. When this tonnage has to be brought to the markets by pack-mules or wagon carts, the cost is often equal to the value of the products. The railway picks up freight every few miles, but the steamship service of South America, on an average, requires a land haul of 150 miles each way, or 300 miles in all. This is one reason, and a strong one, why intercontinental development through railway connection is desirable.

A common illustration, familiar to all railway builders and traffic managers, which may be used, is that of the team with the load of wheat, which, by the time the point of shipment has been reached, has eaten up all the wheat. The same principle applies in mines. Iron ore, coal, copper, silver may exist in great quantities in certain localities, but the mines never will be worked where the cost of transporting the ore is greater than the amount received for it. It is railway lines that make it profitable to develop the mines, and the traffic from this source is always to be considered in providing for railway systems. This probably is more especially necessary with regard to the localities to be reached by the Pan-American System than with those of any other part of the world.

In South America, of late years, the heaviest increase of foreign commerce has been that of the Argentine Republic, which has done most railway building in the last ten or twelve years. Much of this construction has been stimulated by the effort to form a through connection with the railways that will be part of the intercontinental system.

The Argentine Republic itself furnishes a clear example of the national development which comes from railroad lines. In 1880, that country had 1,562 miles of railway, and its total foreign commerce was a little more than $100,000,000. In 1905, it had about 12,000 miles in operation, and its foreign commerce exceeded $500,000,000. In the ten years from 1894 to 1904, the increase in its exports was 159 per cent., and in its imports 102 per cent.—a total of 261 per cent., and this was a period of active railway construction.

The increase in national prosperity which results from railway building may be shown in another manner. In 1895, the imports *per capita* were $23.80, and the exports $30.10; in 1905, they were $37.60 and $53.00, respectively. This is to say that the 12,000 miles of railways in 1905 meant a foreign commerce of $90.60 to every one of the 5,000,000 inhabitants of Argentina.

Mexico is at our doors. We have watched the growth of this sister republic and helped it by the investment of large amounts of our capital in railway enterprises. In 1875, Mexico had 360 miles of rails, and her total imports and exports amounted to $46,319,000 in Mexican currency. During the year 1905, there were 10,300 miles of railway in operation, and the total foreign commerce, in the terms of Mexican currency, reached $387,000,000,—an increase of approximately 700 per cent. in the thirty years since the work of creating a complete system of railroads began.

Mexico is also an illustration of the widening of freight zones beyond the circle of local traffic. The railroad line is the radius of the circle. As it is lengthened, the circumference grows in proportion and the circle of intercontinental and international trade is extended. In 1881, the year in which a through line from the southern border of the United States reached Mexico City, the total of the trade with the United States, both exports and imports, was $19,500,000, largely through the Gulf ports. In 1893 the commerce through the border custom-houses alone amounted to $22,000,000, gold, and this, of course, was railway traffic. In 1905, the railroads to and from Mexico carried freight which, as shown by the import and export figures, exceeded $45,000,000. According to the report of Mr. Limantour, the able Secretary of the Treasury, Mexican railways remit annually to Europe and the United States, for their stockholders and bondholders, $10,000,000. Since the bulk of the capital is from the

United States, most of these remittances come here. They are in addition to the payment for material and to the returns from the freight which the southwestern lines turn over to their Mexican connections.

These examples of the commerce that comes from the traffic of the railways leads to a consideration of the present status of the Pan-American project. Given sufficient tonnage to be created, there is justification and encouragement for railway building. Where this traffic, or a reasonable proportion of it, may be international there is ground for an intercontinental railway.

The Pan-American routes, as surveyed, parallel the Pacific coast along the trend of the Andes, but they provide for branches or feeders which will shoot out toward the Atlantic as well as toward the Pacific. If their construction is much more difficult and costly than when the water-line can be followed, there is in its business aspect the value of the traffic that comes from the tonnage of mineral regions. This tonnage is of the kind that quickly pays for itself.

It is likely that the intercontinental line, in its engineering features, has to overcome difficult conditions in the way of grades, curves, tunnels, bridges, cuts, and embankments, than any similar line of the same length; but it is also true that nowhere is so vast an area of mineral resources, silver, copper, coal, tin, still to be opened up to traffic as along the Andes Mountains. It must also be kept in mind that there are enormous timber areas and agricultural regions which are likewise to be developed and which will create tonnage.

The Pan-American plan provides for ultimate through rail connection between New York and Buenos Ayres, a distance of 10,400 miles, by existing lines and routes as heretofore surveyed. It is a fair statement that, with more thorough surveys and the shortening of some of the lines now in operation, this distance will be reduced to 10,000 miles. If all the lines on the Pan-American location already in operation and yet to be built were combined in a single trunk line, the total mileage between New York and Buenos Ayres would not be greater than the Atchison, the Burlington, the Pennsylvania, the Northwestern, or several other systems. The responsibility of control by one head would not be greater than that which to-day rests with A. J. Cassatt, James J. Hill or E. H. Harriman.

At this time only 3,700 miles of these intercontinental railway sections or gaps are not specially provided for. The Bolivian Government has just entered into arrangements for the building of railroads from the Desaguadero River, on its northern limits, to within 50 miles of its southern border. It has $12,000,000 cash capital for this purpose, and the favorable condition of the negotiations for further capital assure that these lines will be built. Several years ago, the Argentine Government arranged to prolong its lines into Bolivia under a treaty. This work has been proceeding slowly, but it has been given a fresh start, because the action of the Bolivian Government makes it necessary for Argentina to secure connection with the new system in order to prevent traffic which properly belongs to it from being diverted. We may therefore take the railway connection from Buenos Ayres to Lake Titicaca as assured and consider the lines northward.

The Peruvian Government, partly under the stimulus of Pan-American publicity, has secured a loan in Germany which gives it the means of filling in the sections between Lake Titicaca and Cuzco. This is being done. There are already some disconnected rail lines on the intercontinental location from Cuzco to the north. I do not undertake to say how soon they will be joined together, but the following statement gives all the sections in the Pan-American trunk route for which provision has not yet been made: Peru, 1,200 miles; Ecuador, 450 miles; Colombia, 845 miles; Panama and Central America, 1,200 miles; total, 3,695 miles. In this statement, I assume as a fact the prolongation of the line which is now going on from Mexico to the boundary of Guatemala and the closing of the short section in the latter country which will place Guatemala City in direct rail connection with the City of Mexico and therefore with the cities of the United States. The total of railway lines unprovided for at this time is less, therefore, by 100 miles than the Pennsylvania lines east of Pittsburg. It is only 200 miles more than the Mexican Central system.

With regard to the cost, the engineers who made the intercontinental survey estimated $32,000 per mile for grading, masonry and bridges of a standard-gauge railway. On the plains and in the river valleys, the cost of construction, as they estimated it, was probably correct; but for the mountain engineering a liberal additional allowance for contingencies would probably be made by practical railway builders. So the engineers in charge of the intercontinental survey added $8,000 per mile and assumed that the Pan-American line could be built at an average cost of $40,000 per mile.

But let it be assumed that the final cost of these links yet unprovided for, 3,700 miles in all, will average as much as $50,000 per mile. That would mean $185,000,000 yet to be spent on construction. This just about equals the outstanding capital stock of the 4,000 miles of the Baltimore and Ohio System, on which 8 per cent. to 9 per cent. is earned. Probably if $5,000,000 were expended in very thorough surveys and locations of the whole route, the construction expenses would be decreased very largely, for, in building railroads, there is no saving so great as that made by careful preliminary location. But, to be on the safe side, let it be assumed that $185,000,000 is still needed to build these Pan-American sections. Is it beyond the financial resources of the twelve or fifteen countries, including the United States, which are directly interested? The aggregate sum distributed among them is not large, because each section which is built not only develops the local traffic, but widens the freight zone and helps the creation of tonnage in adjoining districts. Who can estimate the trade returns when the railway systems of the United States and Mexico are connected with the network of railways in Argentina and the other republics of America? Our experience with American transcontinental lines may be duplicated.

The Dominion of Canada, after seeing the wonderful wealth which has grown out of the building of the Canadian Pacific, two years ago committed itself to another gigantic project, that known as the Grand Trunk Pacific, which proposes a transcontinental line far to the north, the main trunk from ocean to ocean covering between 3,500 and 3,600 miles. This line opens up great wheat areas which will furnish traffic, yet these wheat areas are a small section of the territory to be traversed. The Rocky Mountains are to be crossed to reach the Pacific, and an enormous stretch of barren country, the productiveness of which is very doubtful, has to be traversed in order to reach an Atlantic port. This project, it was estimated in the beginning, would cost somewhere in excess of $100,000,000. Now the estimates have risen to $175,000,000. A section from Winnipeg to Moncton, New Brunswick, 1,800 miles, is so uncertain as to its resources that the government itself has had to undertake its construction. No section on the Pan-American location of similar length is so unpromising. Instead of barrenness, there are either mineral resources or very rich tropical countries. It is not too much to assume that these Latin-American countries, by cooperation and by the help of the United States, can do as much as the Dominion of Canada is doing for itself. Much aid could be rendered the enterprise by large land grants, the admission free of duty of material used, etc.

So little is known in the United States about South-American railways that, when one states they are profitable, his statement is questioned. Yet the London quotations every day give evidence of their dividend-paying qualities. It is a somewhat curious fact that, in an estimate of the total cost of construction or capital per mile,* there is not much variation between the South-American countries and the United States. This is the estimate:

United States	$55,261
Argentina	49,895
Chile	54,697
Uruguay	52,756

How do the dividends compare? In the Argentine Republic, in a recent year, the 12,000 miles of railway had gross earnings of $61,676,000, gold; working expenses, $32,350,000; and net receipts, $29,326,000. The interest on the capital, which amounted to $573,000,000, was therefore a fraction over 5 per cent. That compares very well with the United States.

But it may be said that Argentina is chiefly a level country, producing wheat and raising cattle, and that the cost of building and maintaining railway lines is relatively cheap. This may be taken for granted, and it may be admitted that Argentina presents the best conditions for highest earning capacity, together with lowest operating expenses, though the bulk of its fuel has to be imported; yet here is an example from a railroad which climbs from the coast to heights of 13,000 feet, crossing a great volcanic mountain range. It was built to develop silver and other mines and provide an outlet for their products. This road is narrow gauge, known as the Antofagasta and Oruro Railway. It begins at Antofagasta, Chile, on the Pacific coast, and extends for 575 miles into the interior of Bolivia. The Bolivian Government guaranteed 6 per cent. on the sections which were built within Bolivia. It never has been called upon to pay a dollar of the guaranty. The net earnings of the road have been 9 per cent. and upwards. This is one of many cases of railway construction in South America where dividends have been paid from the beginning.

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*Transportation Routes and Systems of the World, Bureau of Statistics, Washington.

Everything relating to railway extension, both the Pan-American line and its branches, should interest the American people. It was William Wheelwright, the American, who first sought to force the rails through the Andes of Chile to the pampas of Argentina, sixty years ago, and within two years that plan will be consummated. It was Wheelwright also who built the Argentine railways extending to the north, extensions of which into Bolivia now form sections of the intercontinental trunk line. It was Meiggs, another American, who overcame every engineering difficulty which the Andes Mountains present, and built the lines in Peru that are the wonder of the world. It was C. P. Huntington, also an American, who went into Mexico and Central America as a pioneer and enlisted capital in those systems. It is Andrew Carnegie, who, from the time of the First International Conference, has steadily supported the intercontinental project. Because it is an all-American enterprise, the American people will be sure to endorse whatever steps the Third International American Conference takes for carrying it forward.

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